

**BIOGRAPHICAL SKETCH**

NAME Robert J. Kavlock		POSITION TITLE  Research Biologist	
eRA COMMONS USER NAME Kavlock			
EDUCATION/TRAINING ( <i>Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.</i> )			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
University of Miami	B.S.	1969-73	Biology
University of Miami	Ph.D.	1973-77	Embryology
Federal Executive Institute (Class 321)		2006	Leadership

**A. POSITIONS and HONORS****Research and Professional Experience:**

2005- Director, National Center for Computational Toxicology, ORD, USEPA  
 2004-2005 Special Assistant (Computational Toxicology) to NHEERL Director  
 1999-2000: Acting Associate Director for Health, NHEERL (June-January)  
 1989-2004: Director, Reproductive Toxicology Division, NHEERL, USEPA, RTP, NC  
 1981-1989: Chief, Perinatal Toxicology Branch, DTD, HERL, USEPA, RTP, NC  
 1979-1981: Res. Biologist, Perinatal Toxicology Branch, DTD, HERL, USEPA, RTP, NC  
 1977-1979: Research Associate, Dept. of Biology, Univ. of Miami, Coral Gables, FL  
 Adjunct Associate Professor, Department of Pharmacology, Duke University  
 Adjunct Assistant Professor, Department of Zoology, NCSU

**Professional Societies and Affiliations:**

Memberships: Society of Toxicology, including Developmental and Reproductive Toxicology Specialty Section and the North Carolina Society of Toxicology; Teratology Society  
 Editorial Boards: Toxicological Sciences (1994-2000); Teratogenesis, Carcinogenesis and Mutagenesis (to 2003); Journal of Toxicology and Environmental Health, Part B (current); Journal of Children's Health (2002- ); Birth Defects Research, Part B (2003-present); Neurotoxicology and Teratology (2006-present).

**Honors and Awards:**

US EPA/ORD Statesman of the Year, 2007; US EPA Bronze Medals, 2004; Computational Toxicology Design Team, 1998, for efforts on Harmonized Reproductive Testing Guidelines; US EPA Science Achievement Award, 1995 for efforts on validation of benchmark dose methodology; US EPA Scientific and Technological Achievement Awards: Level I, 1994; Level II, 1983, 1984, 1984, 1986, 1993; Level III, 1983, 1984, 1985, 1985, 1987, 1989, 1992, 1993 for various peer reviewed scientific publications; US EPA Silver Medal, 1985 for development of an in vivo screening procedure for developmental toxicity; Best Paper of the Year Award, Fundamental and Applied Toxicology, 1995; President, Teratology Society, 2001; President, Reproductive and Developmental Toxicology Specialty Section, 1997; President, North Carolina Society of Toxicology, 1999

**Selected Invitations at National & International Symposia:**

Gene Environmental Interactions in Reproduction, Malmo, Sweden, Feb 2008; European Chemicals Agency, October 2007; Duke University SBRP Symposium on HTS Assays, October 2007; 6<sup>th</sup> World Congress on Alternatives to Animals in Research, Tokyo, August 2007; American Chemistry Council, Washington, August 2007; 2<sup>nd</sup> Low Dose Workshop on Low Dose Effects of Environmental Toxicants, Berlin, April 2007; US EPA Office of Pesticide Programs, Washington, Feb. 2007; Duke University School of the Environment, Durham, NC Jan. 2007; US EPA Science Policy Council, Dec. 2006; National Academy of Science Committee of Risk Assessment, Washington, Dec 2006; 4<sup>th</sup> International Academic Conference on Environmental and

Occupational Medicine, Kunming, China, Oct. 2006; US EPA Office of Drinking Water, Sept. 2006; American Association of Pharmaceutical Sciences, San Antonio, Oct. 2006; US EPA Regional Science Liaisons, April 2006; UK ORNL Bioinformatics Summit, April 2006; Society of Toxicology, San Diego, March 2006; US EPA Region 6, Dallas, Jan 2006; European Commission Science Delegation, RTP, Jan 2006; Arizona State University Workshop on Genetics and Environmental Regulation; Jan. 2005; National Academy of Science Committee on the Future of Toxicology, Jan. 2005; National Academy of Science Workshop on Sustainability in the Chemical Industry, Feb. 2005; US EPA National Risk Management Research Laboratory, Cincinnati, Feb. 2005; US EPA Office of Science Coordination and Policy, Mar 2005; Forum, Aspen, July, 2005; Research Triangle Institute, RTP, July 2005; Oak Ridge National Laboratory Ecogenomics Meeting, Knoxville, July, 2005; 5<sup>th</sup> World Congress on Alternatives to Animals in Research, Berlin, August 2005; University of North Carolina Developmental Toxicology Program, October 2005; Board of Scientific Councilors, Jan, 2004; FDA Science Forum, Washington DC, Jan 2004; US/EU Bilateral Meeting on Chemical Safety, Charlottesville, VA, Apr 2004; EPA Office of International Affairs United Kingdom Science Exchange, Aug 2004; National Academy of Sciences Future of Toxicology Committee, Sept 2004;; National Toxicology Program Workshop on Thyroid Toxicity, Washington DC, Apr 2003; US EPA Science Advisory Board, Washington DC, Sept 2003

#### **Selected Expert Committees/Advisory Panels/Organizing Committees:**

NIEHS SBRP Peer Review Panel, Sept 2007; Chair, EPA International Science Forum on Computational Toxicology, 2007; OCED Molecular Screening Initiative Working Group (2005-present); WHO/IPCS Working Group on Principles for Evaluating Health Risks to Children, 2003-2006; Chair, EPA Workshop on a Framework for Computational Toxicology, 2003; Chair, WHO/IPCS and Japan MOE Workshop on Research Needs for Endocrine Disruptors, 2003; ILSI Workgroup on Human Framework for Using MOA Information to Evaluate Human Relevance of Animal Toxicity Data, 2002-2004; EPA/NIEHS/ACC Scientific Frontiers in Developmental Toxicity Risk Assessment, 2002; American Chemistry Council Focal Area Leader, Long Range Research Initiative, 2002-2005; NTP/NIEHS Endocrine Disruptors Low-Dose Peer Review, 2000; IPCS/WHO Steering Group for International State-of-Science Assessment of Endocrine Disruptors, 1997-2002; ; Reviewer, European Commission Framework Calls, 2001, 2002, 2004, 2007; NIH ALTX-4 Study Section, Standing Member, 1997-2001; CIIT Science Advisory Committee, 1996-2001; Chair, NTP Center for Evaluation of Risk to Human Reproduction Expert Panel on Phthalates, 1999-2000 and 2005); IARC Monograph Working Groups, Volumes 36, 41, 47, 54, 58, 73, and 79; IARC Handbooks of Cancer Prevention, Volumes 2 and 4.

#### **Selected Assistance/Advisory Support to the Agency:**

Chair, US EPA/ORD Technical Qualifications Review Board for Science and Technology Positions (2007-2009); Chair, EPA/ORD Computational Toxicology Design Team (2003) and Implementation Steering Group, 2004-present; NHEERL Genomics Program Steering Committee, 2001-2002; Endocrine Disruptor Methods Validation Subcommittee (EPA FACA), 2001-2003; Co-Organizer, Japanese NIES/US EPA Workshop on EDCs, Tokyo, February 2000; NHEERL Human Health Research Strategy Implementation Team, 2001-2003; Chair, NHEERL Branch Chief Career Ladder Committee, 1997-1998; Chair, ORD Endocrine Disruptor Research Strategy Committee, 1995-1998; Chair, EPA Workshop to Develop Research Needs for Endocrine Disruptors, 1995; Chair, HERL Communications Issues Committee, 1992 ;EPA Working Group on Harmonized Testing Guidelines for Reproductive and Developmental Toxicity, 1991-1999; Co-Chair, HERL(NHEERL) Technical Qualifications Board, 1989-1997; Co-Chair, ORD RIHRA Topic IV Subcommittee (Biologically Based Dose Response Models), 1988-1993; HERL/OHR Organizational Goals Committee, 1988; Chair, OHR/HERL Mission Statement Committee, 1987; EPA Working Group on Developmental Toxicity Testing Guidelines, 1984-1985.

#### **B. SELECTED PUBLICATIONS (selected from 160 total).**

Houck, K.A. and Kavlock, R.J. (2007). Understanding mechanisms of toxicity: Insights from drug discovery.

*Toxicol and Appl. Pharm.* (in press).

Kavlock, R.J. (2007). Computational Toxicology. AltTox.Org Way Forward Discussion Commentary (www.AltTox.org)

Dix, DJ, Houck, KA, Martin, MT, Richard, AM, Setzer, RW and Kavlock, RJ (2007). The ToxCast Program for Prioritizing Toxicity Testing of Environmental Chemicals. *Toxicol. Sci.*, 95(1); 5-12.

- Martin, MT, Brennan, R, Hu, W, Ayanoglu, E, Lau, C, Ren, H, Wood, CR, Corton, JC, Kavlock, RJ and Dix, D. (2007). Toxicogenomic Study of Triazole Fungicides and Perfluoroalkyl Acids in Rat Livers Accurately Categorizes Chemicals and Identifies Mechanisms of Toxicity. *Toxicol. Sci.* 97(2): 595-613.
- Rogers, JM and RJ Kavlock (2007). Developmental toxicity. In: Casarett & Doull's Toxicology: The Basic Science of Poisons, 7th edition. Curtis D. Klaassen, editor. McGraw-Hill, Inc., New York, NY, 301-331.
- Kavlock, R, Barr, D, Boelkeheide, K, Breslin, W, Breysse, P, Chapin, R, Gaido, K, Hodgson, E, Marcus, M, Shea, K and Williams, P. (2006). NTP-CERHR Expert Panel update on the reproductive and developmental toxicity of di(2-ethylhexyl phthalate). *Repro. Toxicol.* 22:291-399.
- Kavlock, RJ, Ankley, GT, Collette, T, Francis, E, Hammerstrom, K, Fowle, J, Tilson, H, Schmieder, P, Veith, GD, Weber, W, Wolf, DC, and Young, D. (2005). Computational Toxicology: framework, partnerships and program development. *Repro. Tox.* 19:281-290.
- Kavlock, RJ and Cummings, A (2005). Mode of Action: Reduction of Testosterone Availability-Molinate-induced Inhibition of Spermatogenesis. *Crit. Rev. Tox.* 35:685-690.
- Cummings, A and Kavlock, RJ (2005). A systems biology approach to developmental toxicology. *Repro. Toxicol.* 19:281-290.
- Cummings, A and Kavlock, RJ (2004). Gene-environment interactions: A review of effects on reproduction and development. *Critical Reviews in Toxicology* 34:461-485.
- Wery N, Narotsky MG, Pacico N, Kavlock RJ, Picard JJ, Gofflot F. (2003). Defects in cervical vertebrae in boric acid-exposed rat embryos are associated with anterior shifts of hox gene expression domains. *Birth Defects Res Part A* 67(1):59-67.
- Daston, GP, Cook, JC and Kavlock, RJ (2003). Uncertainties for endocrine disruptors: our view of progress. *Tox. Sci.* 74:245-252
- Rockett, JC, Kavlock, RJ, Lambright, C, Parks, LG, Schmid, JE, Wilson, VS, Wood, C and Dix, DJ (2002). DNA arrays to monitor gene expression in rat blood and uterus following 17 $\beta$ -estradiol exposure: biomonitoring environmental effects using surrogate tissues. *Tox. Sci.* 69:49-59
- Damstra T, Barlow, S, Bergman A, Kavlock R and Van Der Kraak, G, editors (2002). International Programme On Chemical Safety Global Assessment Of The State-Of-The-Science Of Endocrine Disruptors. World Health Organization, Geneva.
- Setzer RW, Lau C, Mole ML, Copeland MF, Rogers JM, and Kavlock RJ. (2001). Toward a biologically based dose-response model for developmental toxicity of 5-fluorouracil in the rat: a mathematical construct. *Toxicol Sci.*; 59(1):49-58.
- Goldman, JM, Laws, SC, Balchak, SK, Cooper, RL and Kavlock, RJ (2000). Endocrine-disrupting chemicals: prepubertal exposures and effects on sexual maturation and thyroid activity in the female rat. A focus on the ESTAC recommendations. *Critical Reviews in Toxicology* 30(2):135-196.
- Barlow, S, RJ Kavlock, JA Moore, SL Schantz DM Sheehan, DL Shuey, and JM Lary (1999). Teratology Society position paper: The developmental toxicity of endocrine disruptors to humans. *Teratology* 60(6):365-375.
- Reiter, LW, C DeRosa, RJ Kavlock, G Lucier, MJ Mac, J Melillo, RL Melnicj, and T Sinks (1998). The U.S. Federal framework for research on endocrine disruptors and an analysis of research programs supported during Fiscal Year 1996. *Environ Health Persp* 106(3):105-113.
- Kavlock, RJ and GP Daston (1997). Handbook of Experimental Pharmacology, Vol. 124 Drug Toxicity in Embryonic Development. Vol I and II: Advances in Understanding Mechanisms of Birth Defects: Morphogenesis and Processes at Risks. (610 pgs). Springer-Verlag, Heidelberg, Germany, ISBN 3-540-61259-9; ISBN 3-540-61261-0.
- Cooper, RL and RJ Kavlock (1997). Endocrine disruptors and reproductive development: A weight-of-evidence overview. *Journal of Endocrinology* 152:159-166.
- Kavlock, RJ and GT Ankley (1996) A perspective on the risk assessment process for endocrine-disruptive effects on wildlife and human health. *Risk Analysis* 16(6):731-739.
- Kavlock, RJ, GP Daston, C DeRosa, P Fenner-Crisp, LE Gray, S Kaattari, G Lucier, M Luster, MJ Mac, C Maczka, R Miller, J Moore, R Rolland, G Scott, DM Sheehan, T Sinks and HA Tilson (1996). Research needs for the risk assessment of health and environmental effects of endocrine disruptors: A Report of the U.S. EPA sponsored workshop. *Environmental Health Perspectives* Vol. 104, Supplement 4, pp 715-740.

- Kavlock, RJ and RW Setzer (1996). The road to embryologically based dose-response models. *Environmental Health Perspectives* 104 (Suppl 1):107-121.
- Kavlock, RJ, BC Allen, EM Faustman, CA Kimmel (1995). Dose response assessments for developmental toxicity:IV. Benchmark doses for fetal weight changes. *J Fund Appl Toxicol* 26:211-222.
- Faustman, EM, BC Allen, RJ Kavlock, and CA Kimmel (1994). Dose-Response Assessment for Developmental Toxicity: I. Characterization of Data Base and Determination of NOAELs. *Fundamental and Applied Toxicology* 23:478-486.
- Shuey, DL, C Lau, RJ Kavlock, JM Rogers, TR Logsdon, RM Zucker, KH Elstein, MG Narotsky, and RW Setzer (1994). Biologically-Based Dose-Response Modeling in Developmental Toxicology: Biochemical and Cellular Sequelae of 5-Fluorouracil Exposure in the Rat Fetus. *Toxicology and Applied Pharmacology* 126: 129-144.
- Kavlock, RJ, TR Logsdon and JA Gray (1993). Fetal Development in the Rat Following Disruption of Maternal Renal Function During Pregnancy. *Teratology* 48(2):247-258.
- Rogers, JM, ML Mole, N Chernoff, BD Barbee, CI Turner, TR Logsdon and RJ Kavlock (1993). The Developmental Toxicity of Inhaled Methanol in the CD-1 Mouse, with Application of Quantitative Dose-Response Modeling for Estimation of Benchmark Doses. *Teratology* 47:175-188.
- Oglesby, LA, MT Ebron-McCoy, TR Logsdon, F Copeland, PE Beyer and RJ Kavlock (1992). In Vitro Embryotoxicity of a Series of Para-Substituted Phenols: Structure, Activity and Correlation with In Vivo Data. *Teratology* 45(1):11-33.
- Kavlock, RJ, GA Green, GL Kimmel, R Morrissey, E Owens, JM Rogers, TW Sadler, HF Stack, MD Waters and F Welsch (1991). Activity Profiles of Developmental Toxicity: Design Considerations and Pilot Implementation. *Teratology* 43:159-185.
- Kavlock, RJ (1990). Structure-activity relationships in the developmental toxicity of substituted phenols: In vivo effects. *Teratology* 41(1):43-59.
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